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*Published in:*

Proceedings of the first WBCSD and EMAN joint international sustainability accounting symposium, Geneva, 2015

*Publication date:*

2015

*Document Version*

Publisher's PDF, also known as Version of record

[Link back to DTU Orbit](#)

*Citation (APA):*

Pigosso, D. C. A., & McAloone, T. C. (2015). Measuring and Maturing the Sustainability Performance of Companies. In R. Irwin, & S. Schaltegger (Eds.), *Proceedings of the first WBCSD and EMAN joint international sustainability accounting symposium, Geneva, 2015* (pp. 86-88). World Business Council for Sustainable Development .

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# Measuring and Maturing the Sustainability Performance of Companies

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**Abstract:** In the emerging agenda of integrated policies for innovation and sustainable development, measuring and building capabilities for sustainability integration into product development play a determinant role. This paper presents a consolidated and proven approach to support companies in measuring and maturing their sustainability performance.

## I. INTRODUCTION

Sustainability has become a key competitive factor for industry worldwide. Sustainability incorporation into business processes is essential to boost marketing opportunities, comply with legislation and fulfil customers' needs, ensuring long-term success and competitive forefront [1–3].

Product development is a core business process for sustainability integration into manufacturing companies: ca. 90% of the environmental, economic and social impacts across a product life cycle [4,5] (from raw material extraction and manufacturing to use and end-of-life) are determined in the initial phases of product development [6,7].

Nevertheless, companies still face various managerial, organizational and technical challenges for an effective, consistent and successful implementation of sustainability into product development [10–13].

## II. HOW CAN WE SUPPORT COMPANIES TO MEASURE AND MATURE THEIR ABILITIES TO SUSTAIN?

This article introduces a managerial framework developed in academy over the last 10 years in close collaboration with industry to support the management of sustainability integration into product development and related processes [14–16].

The EcoM2 (Eco Maturity Model) is composed by a comprehensive body of knowledge of more than 700 best practices, organized in five maturity levels [17] that represent successive stages for incorporating sustainability into business processes [14].

By enabling the measurement of companies' current maturity profile and providing guidance on the best path for implementation, the EcoM2 supports companies on a systematic and consistent management of sustainability integration into the product development and related processes (such as marketing, purchasing and manufacturing).

The EcoM2 focuses on process improvement (product development and related processes) from a managerial perspective. In other words, it focuses on the systematic and sustained integration of sustainability into the processes of a product development organization, with a view to deployment in all development projects.

When the best practices for sustainability integration are properly considered during the product development and related processes, the natural consequence is the development of products with enhanced sustainability performance.

## III. HOW DOES THE MATURITY MODEL WORK?

The EcoM2 provides a structured framework for the implementation and management of sustainability into product development, based on six main steps (figure 1) [18].

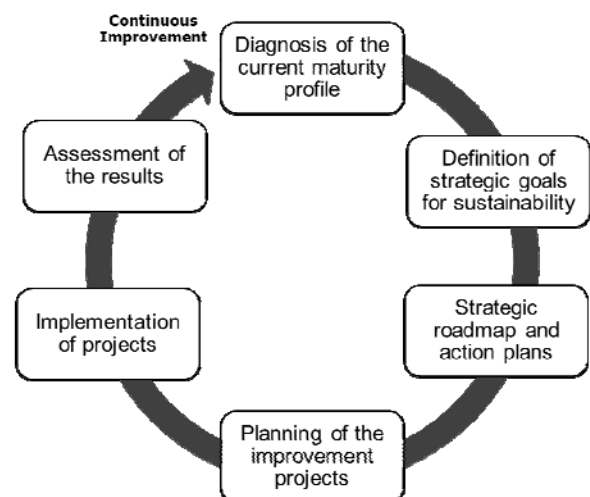


FIGURE 1: CONTINUOUS IMPROVEMENT FRAMEWORK FOR INCREASING SUSTAINABILITY MATURITY

It starts with a diagnosis (or measurement) of the current maturity profile (“as-is”) and definition of strategic goals for implementation (“to-be”). Based on the gap between the “to-be” and “as-is” maturity profiles, strategic roadmaps and actions plans are deployed based on the EcoM2 body of knowledge.

Subsequently, the projects are planned and implemented with special consideration of Change Management best practices. The results of each project are continually evaluated throughout the improvement cycle. A given improvement cycle is finalized by a new diagnosis that will evidence the achievements and allow the identification of further projects to be implemented towards higher maturity profiles.

## IV. HOW DO WE MEASURE THE CURRENT MATURITY PROFILE?

The first step when applying the EcoM2 is the diagnosis of the current maturity profile of a company's product development and related processes in regards to sustainability implementation [14].

During the diagnosis, we measure the sustainability performance of product development companies based on

five capability levels (from incomplete and ad hoc, to formalized, controlled and optimized implementation) that indicate how well each one of the EcoM2 best practices is being applied.

The diagnosis is performed in three main steps: (1) in-depth documental analysis, (2) face-to-face interviews with stakeholders from different hierarchical levels and functions and (3) consolidation of the results with quantitative data analysis.

The results of the diagnosis are consolidated in the maturity profile of the company, represented in the maturity radar (figure 2).

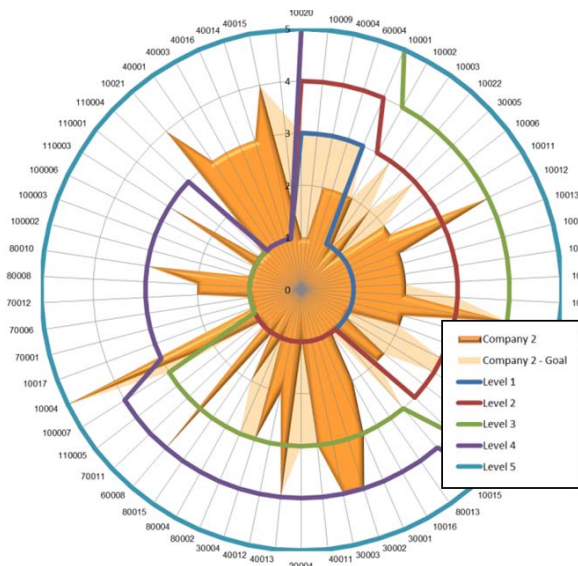


FIGURE 2: EXAMPLE OF A MATURITY PROFILE OF A COMPANY (INCLUDING THE “AS-IS”, THE “TO-BE” AND STANDARD MATURITY LEVELS) – THE MATURITY PROFILE MEASURES THE INTEGRATION OF SUSTAINABILITY INTO PRODUCT DEVELOPMENT AND RELATED PROCESSES

The radar is an effective tool to communicate the company’s performance on sustainability integration into product development, since it provides a clear and visual representation of the current maturity profile, showing strengths and improvement opportunities in relation to the standard maturity levels and the companies’ strategic drivers.

## V. WHICH ARE THE BENEFITS FOR COMPANIES?

Currently, the EcoM2 is being successfully applied into several large multinational manufacturing companies in South America and Europe.

The companies’ types vary from business-to-consumer (B2C) to business-to-business (B2B), with sectors ranging from aerospace to toys and cosmetics. All the companies involved with the EcoM2 application are currently implementing the defined roadmaps, being in different stages of the improvement cycle defined by the application method.

The EcoM2 has proven to support companies with different characteristics and maturity stages towards a systematic and consistent integration of sustainability into product development and related processes. Based

on the application of the EcoM2 in those companies, the following direct benefits could be identified:

- Systematic way for measuring and enhancing sustainability maturity in product development, aligned to the long-term strategies and goals;
- Consistent and reliable evaluation of strengths and improvement opportunities, based on the diagnosis of the current maturity profile (“as-is” situation);
- Comprehensive benchmarking of best practices and cross-companies profiles, indicating the relative position of the company in its market;
- Strong basis for setting strategic goals towards sustainability integration into product development, which allows the deployment of strategic roadmaps (“to-be” situation);
- Common language and a shared vision in the organization, supporting communication and awareness raising in addition to top-management commitment;
- Continuous improvement framework that supports companies towards higher maturity profiles on sustainability integration into product development.

In other words, the EcoM2 supports managers in the measurement of their maturity for sustainability integration into product development and on the deployment of strategic and tactical action plans for an effective and successful implementation, according to their strategic drivers and goals.

Further developments of the EcoM2 includes: (1) establishment of a recognition scheme to companies based on their current maturity profile, which will allow a direct communication to the main stakeholders and increased competitive advantages; and (2) development of a framework to calculate the business case for sustainability integration into the product development and related processes to enhance the analytical power of decision-making in sustainability implementation.

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